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The JOURNAL of GEOGRAPHY

VOLUME XXV NOVEMBER, 1926 NUMBER 8

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IN THE HEART OF THE APPALACHIANS

The famous Horse Shoe Curve and the reservoirs that supply water to the city of Altoona, Pennsylvania

Published by A. J. NYSTROM & Co., for THE NATIONAL COUNCIL OF GEOGRAPHY TEACHERS
GEORGE J. MILLER, *Editor and Secretary*

THE JOURNAL OF GEOGRAPHY

A MAGAZINE FOR SCHOOLS

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The subscription price is $2.50 a year, payable in advance. The price of single copies is 35 cents. Postage is prepaid on subscriptions from the United States, Canal Zone, Republic of Panama, Porto Rico, Cuba, Virgin Islands of the United States, Dominican Republic, Philippines, Guam, Samoan Islands, Hawaii, Mexico, Costa Rica, Guatemala, Nicaragua, Republic of Honduras, Salvador, Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uraguay, Spain and Spanish colonies. Postage is charged extra for Canada and all other countries in the Postal Union as follows: 27 cents on annual subscriptions (total $2.77), on single copies 3 cents (total 38 cents).

The Journal is the official organ of the National Council of Geography Teachers and is sent to all members of the organization. The annual dues, $2.00, are payable to the *Journal of Geography*. Extra postage rates for copies sent to foreign countries should be added to the membership dues.

Patrons are requested to make all remittances payable to the *Journal of Geography*, in postal or express money orders or bank drafts.

Members and subscribers who wish to continue receiving the *Journal* must send remittances promptly to assure the volume being complete.

Send manuscript and books for notice or review to the *Editor*.
Send orders for back numbers to *Journal of Geography*.

Published monthly except June, July and August

PUBLICATION OFFICES: 458 AHNAIP STREET, MENASHA, WISCONSIN

Business Correspondence, Membership Dues, and Subscriptions may be sent to Publication office or to

A. J. NYSTROM AND COMPANY,
PUBLISHERS, JOURNAL OF GEOGRAPHY,
2249 CALUMET AVENUE, CHICAGO

Entered as second-class matter January 15, 1919, at the postoffice of Menasha, Wisconsin, under the Act of March 3, 1879.

The JOURNAL of GEOGRAPHY

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VOLUME XXV NOVEMBER, 1926 NUMBER 8

FRANCE

AMY E. WARE
State Normal School, Salem, Massachusetts

PURPOSE OF ARTICLE

The problem facing the geography teacher is how to use to advantage the brief amount of time possible to allot to the study of a single geographical unit. The tendency to keep to the outline method is due to the seeming ability this gives to cover a large number of facts in a brief period of time. This method defeats its only excuse for use by being too dry and uninteresting. Since a greatly desired result of all geography teaching is the arousing of an understanding interest in the countries of the world, it would be best if teachers did not count facts to be taught, but endeavored, by means of widely varied approaches, to cultivate this understanding interest.

The majority of teachers teach a very limited portion of the whole field of geography and of the world map. A teacher need not approach any single part of her course in the identical way of the previous unit, or in fact, of the previous year. To limit the work done to a single text or group of texts is most undesirable. There are few teachers but have access to a state, university, or neighboring city library—often all three. Any teacher may build up a reference library, collection of maps and other illustrative material which will make her work tell both as regards the lasting interest of her group and as to her own growth.

When a teacher has the opportunity—it could well be called a privilege—to teach the geography of France, she has a full bag of geographic riches if she but knew it, and needs no Houdini to find a way to reach in and haul out the special jewel, or as complete a variety of jewels as she may need. The study of France may be centered about one or more topics and give a wide range of facts and real abiding interest and understanding of this land. Hence, the purpose of this article is to suggest different methods by which France may be studied.

LOCATION

Is there any country of continental Europe as fortunately located as France? There are weaknesses due to long international boundaries in the east and south, but even then, except for a

FIG. 1. Minerals of France. Base map, Courtesy of A. K. Lobeck

limited area in the northeast, there are natural features which make difficult invasion by hostile neighbors, and in peace times give ready access to important avenues of trade.

The outstanding fact of France's location is that it is practically the center of the land hemisphere and has direct access, by

means of several water fronts, to the world's most important trade routes, the North Atlantic and Mediterranean-Asiatic Routes.

North Africa has been called the Keystone of the Colonial Empire of France and is generally recognized today as a part of Mediterranean Europe. Isn't it the location of France in reference to the Mediterranean which makes North Africa the Keystone of the Colonial Empire?

Area and Population

Not always are comparisons odious. Sometimes they are most enlightening. When applied in geography, they give the right perspective too frequently lacking. A large majority of us think of all European countries, save Russia, as pocket editions. One wonders if the "Grand Tour," endured by thousands yearly, is not largely responsible. Finger-counting of the countries visited is a popular pastime when two "Grand Tourers" meet. They fail to realize that their itinerary would make a cross-country puzzle, with few open spaces to be filled in the midst of the heavy black design of the areas not even passed thru.

France is one of the countries that suffers much diminution because Paris and environs, the battle-fields, and the Riviera are the high spots hit by the trippers in the approved hop-skip-jump fashion.

It is enlightening to compare France with a corresponding area in America. Get out your map and note that France has a range of nine degrees in latitude, Strasbourg to Cape St. Mathieu, Brittany, 560 miles; and twelve degrees in longitude, Dunkirk to Spanish boundary, 600 miles. The area of France is 212,659 square miles, including the Island of Corsica. A corresponding location in latitude in the western hemisphere would place France over most of New England, New Brunswick, west as far as Syracuse, and north, four hundred miles into the Province of Quebec, and including a small portion of Ontario. It may be worth while to note that a New England, New York, New Jersey, Pennsylvania, and a Virginia might be carved out of France, and enough area left to more than provide another Rhode Island. Surely this comparison seems to cause France to expand as one gazes on the map.

The population of a country is a significant item, and comparisons are far more comprehensible than figures. The population of the above group of states would not suffice for France, for

the population of France, 39,402,749, (1921) would about equal the population of the Atlantic seaboard states omitting only Florida.

PHYSICAL REGIONS

No area of like size in the United States gives as wide a range of surface features as France. Plains, plateaus, peneplains, volcanoes, young mountains, all play important parts in giving to France diversification of surface. If the order is for plains, France can produce all varieties, including special features. The position of the Aquitanian Basin, at the foot of the Pyrenees, owes its present surface features largely to alluvial deposits which slope northward from the mountains, which are their source. The western portion of this basin is of coastal plain type, and includes the Landes, its chief features were sand dunes and swamps, but today applied science has made it a vast forest of maritime pine and one of the most prosperous regions of France. The Mediterranean end also owes its origin to land drainage, wave and wind action, only here, due to climate and soil, is one of the most extensive vine growing areas in the world.

Paris Basin, the largest and most important physical region of France, is a structural plain with a wide range of surface features, from the simple relief of Loire and Touraine, "the garden of France," to the complex relief in the east, as in the forest lands of the Soissonnais. The Soane-Rhone depression furnishes further varieties of the plain type. The northern section, the valley of the Soane, owes its surface features, in part, to the fact that the plain during the recent glacial epoch was the floor of a lake. The lower section of the depression is largely the work of the river and its Alpine branches, hence has the well-known features of the flood-plain and delta. In the delta of the poorly drained lands of La Camargue, life is still very primitive.

True plateau types are the most limited of the physical features of France. There is a limited area in the south, near the Central Massive, and sections of the Paris Basin have plateau characteristics but can in no respect be compared with the other features of France in extent and influence on the development of the country.

France can furnish two extremes of mountain types, those with all the characteristics of youth, and those so old as to be thought of as worn down to their very roots. The French Alps and the

Pyrenees give examples of recent elevation, glaciation—active and past—and youthful stream features. The peneplains of Brittany and the Central Massive show diversification due to recent but relatively slight uplifts, tho in the case of Brittany, subsequent to a marked depression which produced the present embayed coast.

FIG. 2. Agricultural Regions of France. 1. Crop-pasture land: dairy, potato, buckwheat. 2. Crop land: sugar beet, wheat, dairy, grape. 3. Crop-forest land: rye, buckwheat, potatoes, sheep. 4. Pasture-crop land: millet, rye, ("Landes," maritime pine). 5. Crop-pasture land: corn. 6. Crop-pasture land: grape. 6A. Pasture land: sheep. 7. Pasture-crop land: grape. 8. Forest-pasture land: pasture above timber line. 9. Forest-crop land. This map is an adaptation of the "Land Utilization Map" by Olaf Jonasson in *Economic Geography*, October, 1925, to the physiographic diagram of France from A. K. Lobeck's "Physiographic Diagram of Europe." Used with permission.

Associated with the Central Massive—doubtless the product of the forces at work in its recent period of uplift—is the volcanic region of France, the Auvergne. Tho not active, in the memory of man, the cones, craters and lava flows give fine examples of vulcanism.

The eastern and southern section of this Massive, known as the Causses is a limestone table-land with karsten characteristics, an area attracting more and more attention because of the strange, almost weird beauty of its scenery. In the caves of this region originated the Roquefort cheese industry.

A study of the physical regions of France should include a study of the four great river systems. They are interesting to contrast in respect to their chief characteristics, and influences past and present on the development of France.

If the group which is making a study of France wishes for more than the usual superficial knowledge of the country, it will find a detailed study of the physical provinces and corresponding life responses worth pursuing. Not only should the regions be so studied, but quite as important is their relation to each other. In what other country are so varied a group of physical features so advantageously placed in relation to each other? No teacher will find this method of teaching France formidable for there is a wealth of material easy of access. An enlarged copy on the blackboard of the physiographic diagram of France, taken from A. K. Lobeck's "Physiographic Diagram of Europe," lends itself to a number of interesting exercises.

Coastline and Harbors

Few countries offer a coastline more worth while studying than does this country of France. It is true that varied features do not give as irregular a coastline nor as good natural harbors as has the neighboring country of England, but there certainly are compensations. The extent and placing of the coastline is hard to improve upon. The north coastline, 700 miles in length, gives access to that famous fishing ground, the North Sea, (note the importance of Boulogne and Dunkirk as fishing ports) and helps to form the English Channel and Straits of Dover, commercially the most important corridor in the world. The influence of this coastline is evident in the extended harbor works which have given to France, Cherbourg, Le Havre, Boulogne, Calais, and Dunkirk, important in

overseas and channel traffic. The western third of this north coast is the embayed coast of Brittany, too far from the industrial and commercial centers to develop flourishing ports, but a natural center for the fishing industry, important to France not only as a source of food and a product for export, but as a source of man power for the merchant marine and navy.

The western coast of France, 865 miles in length, not only furnishes an outlet for the surplus products of an important producing area, but gives it the extensive estuary harbor of the port of Bordeaux, a harbor well located for the trade with southern United States and South America. Here are located extensive manufacturing plants depending upon cacao which is one evidence of the South American trade.

Finally, tho in point of historic importance first there is the south coast, France's important Mediterranean outlet, 384 miles in length. As along most of the coast of France, save in Brittany, land drainage and wave-borne materials give a practically harborless coast. But, so important is this outlet that engineering skill has provided an artificial harbor for France's important port of Marseille. The only other port of commercial importance, Cette, also has an artifical harbor. Toulon, possessing a natural harbor, is not well located for commerce, hence has become important as a naval base.

The coastline of France, falling naturally as it does into four sections, offers an interesting way of approach to the geography and social history of France. Each physical province of France is, in part if not wholly, more closely associated with one of the four sections than with the rest, and must be studied, as it contributes to and absorbs or transfers the shiploads that arrive and leave the busy ports.

Climate

One of the hardest facts to remember about France is that, on the globe, it is just across the Atlantic from New Brunswick, Newfoundland, Nova Scotia, and New England. We have known so long of the French grape, orange, olive, silk production, the winter resorts of the Riviera and the Gave Valley, that we have placed France as far south as Florida. Among the many fortunate circumstances of the geography of France is this one of climate. No where, in spite of its northern location, does France have the extremes of temperature of northern New England and southeast

Canada. Neither does France have areas of true aridity. The so-called desert, the Causses, is due to karsten type of drainage and well deserves the epithet, "Rock Sieve," which a native applied to it. As in so many other geographical aspects, France has varied climate types within its borders.

The Mediterranean coastal belt, protected by the Alps, Central Massive, and Pyrenees, has the Mediterranean type of climate. There are winter rains, mainly of the shower type, and the temperature is usually above freezing. In the summer, cloudless days and high temperature are usual, tho the nights, due to the low humidity and influence of adjacent Mediterranean waters, are most comfortable. A portion of this area, the Rhone Valley, south of Donzére, is frequently visited, usually in winter, by the Mistral, which sometimes blows with extreme violence and, at all times, brings lower, often freezing, temperatures. This wind is caused by a low pressure area over the Gulf of Lion, with an anticyclone over the west of Europe. The Rhone Valley gives it a confined but unimpeded channel.

Brittany furnishes an extreme example of the marine type of climate. The winters are mild, never below freezing, and the summers cool. The relative humidity is high the year round, and there are, in many parts, almost daily rains, tho usually of the drizzly type. On the protected coastal flats in the many harbors, early vegetables may be raised, competing with those from the Mediterranean district in the markets of all Western Europe.

Most of France has the marine type of climate, varied in temperature and rainfall as determined by latitude, altitude, and distance from the sea. The greatest seasonal range of temperature is experienced in the Central Massive area. Distance from sea and altitude are sufficient explanation of this.

PEOPLE

Americans are too prone to believe that the Americas furnish the only example of a "melting pot of peoples" that the world has experienced. There does not seem to have been a time since the beginning of history when migration and assimilation were not active forces in developing nations. All the countries of Europe have had such periods in their history. France, no doubt because of location, coastline, diverse surface features including natural thoroughfares of ingress as the Saone-Rhone Valley, and the slow

development of a strong centralized state, has had as prolonged an immigration and has received as many and diverse peoples as any part of Europe. Locally the French people show diversity in physical types, characteristics, and even language, due in part to different race groups, Celtic, Basque, Teutonic, Latin, even Hellenic, Semitic and Arabic, which have penetrated this section of Europe.

It is worth noting that even today the foreign nationals are yearly entering France in large numbers from its African colonies and its more prolific neighbors. The Belgians come to work in the sugar beet and wheat fields, the Spaniards in the vineyards, the Italians help in the harvest in the southeast or as cowmen and cheese makers in Savoy. Swiss, Germans, and even Poles, come to help in the harvest season. Many of these immigrants have helped in the immense task of reconstruction in the devastated area. Tho this stream of labor flows in and out with the season, nevertheless a large number, especially of the Spanish and Italian groups, remain to become naturalized citizens of France.

Nineteen twenty-four brought the following national groups, mainly as temporary labor: Italians, 97,577; Poles, 38,048; Belgians, 34,741; Spaniards, 14,982; Portuguese, 14,206. One hundred four thousand, one hundred twelve of these went to the devastated region.[1]

Time, surface, trade, the development of a common language, and Paris have been important factors in producing the French nation.

The typical Frenchman is quite largely a creation of the imagination on the part of those vaguely interested in things French. He has to be searched for and may be found in the large towns, especially Paris. "There the natives from every province come into contact and amalgamate: the babbling Gascons, ever in motion; the men from the plateau, inured to hard work, and slow to make friends; the people from the Loire, with their quick eyes, lucid intellect, and well-balanced temperament; the melancholic Breton, always living as in a dream, but full of tenacity in all concerns of real life; the Norman, slow-speaking, circumspect, and prudent; and the men from Lorraine, the Vosges, and Franche-Comte, who are quick-tempered and enterprising. All these Frenchmen mutually influence each other, and evolve what may be called the general character of the French people."[2]

1. World Almanac, 1925
2. Élisée Reclus, The Earth and Its Inhabitants, vol. II, p. 21

It is well to include at least a brief study of the characteristics of the French people, for it must lead to an appreciation and better understanding difficult to obtain in any other way. Barrett Wendell, in "The France of Today," gives an interesting and valuable analysis of the French people, their characteristics and social organization. The family, not the individual, is the social unit, and French society is a great group of families. "French people are probably the most alertly intelligent in the modern world, and this both from native impulse and from the training consequent upon the circumstances of their intensely competitive life. The intensity of their competition . . . demands insistent, unremittant, intellectual work." It is well to remember that France has given to the world her quota of famous people, not only in art and literature, but in science.

The people of France reflect in the diversification of their social development the diversification of France. Not all of rural France lives in villages, as we are often lead to believe. In the section known as the West, which includes Brittany, Normandy, Anjou and Vendée, dispersed dwellings are common, as is also true in parts of the Pyrenees and Alps.

Natural Resources

Water Power. France is not generally considered rich in natural resources, but is this generalization based on a just estimate of its natural sources of wealth? A natural resource which today is commanding more and more attention is that of water power. The outstanding fact is that France ranks second among European nations in the amount of potential horsepower its rivers and streams possess, and first in the amount already developed.

Minimum Potential Water Power

Norway	5,500,000 horse power
France	4,700,000 horse power
Sweden	4,500,000 horse power
Italy	3,800,000 horse power
Austria	3,000,000 horse power[3]

Compare France with the United States, and you find that the potential horse power, at low water, of France exceeds that of our whole Atlantic coastal group. The minimum for the combined Atlantic coastal groups of states is 4,561,000, maximum, 8,350,000; France's minimum, 4,700,000, maximum, 9,400,000.

[3] World Atlas of Commercial Geology, Part II, Water Power of the World

It is difficult to give exact data as to France's developed power and place among the nations of Europe in this particular. In 1920, the developed power was estimated as 1,400,000 horse power. Norway ranked second, with 1,350,000 horse power.

The program of development France had outlined, and which has practically been put thru, was to give France 3,000,000 developed horse power in 1926. Much of the developed power of France is to make up for loss in man power, especially in the rural areas. Most of this development is apportioned to electrometallurgy, industry, including light and traction, and electrochemistry.

Minerals. A study of France based on its mineral resources is of special interest because of the important problems that the student has to consider. Today France possesses 46 per cent of the total iron reserve of Europe and ranks next to United States in the extent of its developed iron ore reserves. The major portion of this reserve is in Lorraine, but there are important reserves in Normandy, Brittany, and Anjou. Added to these are the valuable reserves of North Africa.

The serious problem facing France is the necessary coal resources to continue the development of these mines on the prewar scale. Another problem is markets for this iron and steel. Before the war, France produced 3 per cent of the world's coal and consumed 5 per cent. The major portion of this coal supply came from the Plain of the Nord, a small portion from the Vosges, and practically all of the rest from scattered mines in the Central Massive. Today the output of the Saar Basin, not essentially a coking coal, may be added to the prewar sources, tho, as yet, not all of the mines of the Plain of the Nord have been restored to prewar production.

Concerning the new mineral of world advantage, petroleum, France is similarly situated to its neighbors, having no supply within its borders, save a limited amount of oil shale. French colonies are not known to have any important oil resources.

As regards mineral fertilizers, France is more fortunate than any other country, for it now has, within its borders or in adjacent colonial areas, extensive reserves of both potash and phosphates. In Alsace, near Mulhouse, are the world's second largest known deposits of soluble potassium salts. Scrutiny of our list of imports from France will show that we are drawing many tons from this area yearly. The phosphate deposits of Tunis and Algeria rank

next as producing areas to those of United States, these African provinces producing about one-third of the world's annual supply.

France leads the world in the production of bauxite, aluminum ore, totaling over 50 per cent of the world's production. As concerns other metals, its production, if any at all, falls far behind its consumption.

Soils. The soils of France are, on the whole, France's most valuable resource. They present, as a result of the underlying rock, climate, and origin, a wide range of chemical and physical qualities and resultant contrasting agricultural and social communities. In Brittany, an old crystalline rock area, the soils are generally thin and infertile, but the climate and impermeable nature of this rock cause this section to be characterized by the freshness of its vegetation. Modern methods of liming and fertilizing these soils have greatly benefited the area and changed the farming system to varied crop production and cattle raising. Potatoes, buckwheat, barley, rye, apples, and dairy products are important products of western France. The people of the area are the "conservative, tradition-keeping element of France." The poverty and large families of Brittany contrast with the small families of more prosperous areas.

In the Alps and Pyrenees are limited soil areas, making up in number and variety of physical characteristics what they lack in area. In the larger valleys of the Alps are fertile alluvial lands, thickly settled. Mulberry trees, the vine tobacco, corn, and fruit trees are cultivated, according to the exposure of the valley. On the higher slopes, where the soils of glacial or talus origin are thin and the growing season short, wheat, other cereals, and hay are important. These little cultivated areas, clinging to steep slopes often carefully terraced, give mute evidence of the industry and love of the land so characteristic of French peasantry.

The Basin of Aquitaine, tho possessing a wide range of soils, is one of the most important agricultural areas of France. A large part of the region is densely populated for an agricultural section. Life is easy, too easy, many believe, for the development of initiative.

The Paris Basin presents a wider range of soils than physical features. There are the wide monotonous fields of Berry's limestone soils and of the loam and limestone soils of the Beauce, which, with the loamy clay soils of the varied Brie, constitute the granary of France.

The sterile, chalky soils of the dry Champagne (Champagne pouilleuse), with its sparse vegetation, presents a striking contrast to the adjacent moist area (Champagne humide) and its dense

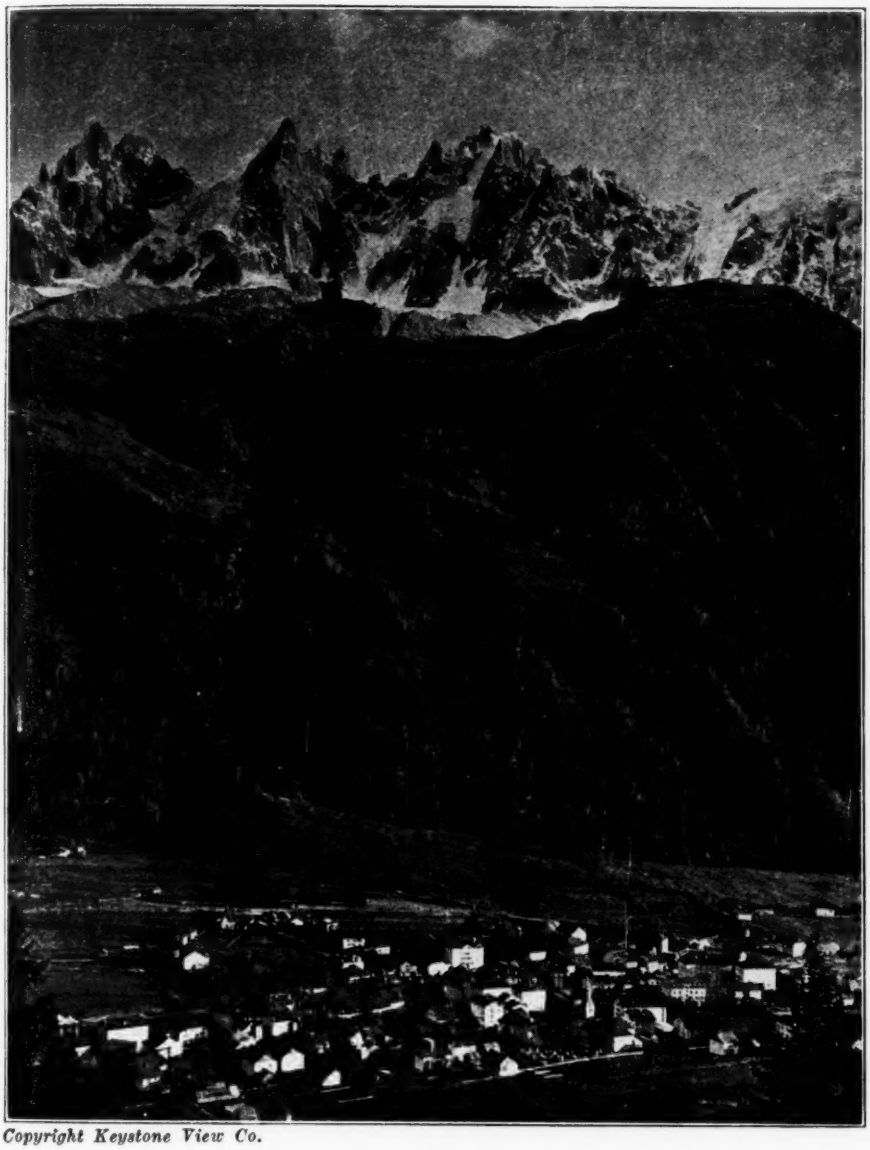

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FIG. 3. A Village of Chamonix in the French Alps

forests, of which the forest of the Argonne is today best known. Limited areas of rich mellow soil with a limestone content, on the east and south slopes of the escarpments of the Champagne, are

the sources of the most famous of the vineyards of France. The moist clay soils of the low flat Flanders section of this basin produce luxuriant vegetation. The varied agricultural products, wheat, barley, hops, beet sugar, flax, milk, butter, cheese, and meat, indicate the value of this region.

The dry, chalky, but fertile soil of Picardy produces wheat, beet sugar, cattle products, and has valuable associated manufacturing industries of milling, refining, brewing, and distilling.

These few examples of the varied soil resources point the way to a comprehensive study of France. Unfortunately, recent material on the soil resources of France is not as accessible as is true of other geographic factors. Yet, a study of France based upon its soils would give an understanding of the outstanding characteristics of the French people, whose thrift, industry, intelligence, painstaking, wholesomeness, cheer and good will are worth any effort to understand. However, a few sources, particularly "Geography of France" by Blanchard and Todd, contain abundant material on soils. The resourceful teacher with a well-trained group would find this information worth digging out.

Forests. The observant American, traveling widely in France, is amazed at the extent of the forests and the abundant evidence of the value of the lumber these forests give. Motoring along a winding road in the Alps, one may find the way almost blocked by a four- or six-ox team hauling a huge log that has been cut in the neighboring forests, or, while traveling thru the central and eastern Pyrenees, a great log may pass high overhead, carried on seemingly threadlike wires. In the neighborhood of Bordeaux, one may travel for hours thru a splendid forest of maritime pine and note the numerous turpentine stills and sawmills which indicate the productiveness of this area.

The forests of the higher altitudes are mainly coniferous, which include fir, pine, spruce, larch, and aleppo pine. These soft wood forests, with the maritime pine forests of the Biscay Coast, make up about 20 per cent of the total forested area. Oak, beech, and hornbeam are the most common of the hardwoods, oak alone covering about 39 per cent of the total forest area. The French forests, including Alsace Lorraine, yielded, according to official estimates, 971,000,000 cubic feet in 1923. Six hundred fifty-eight million cubic feet was of firewood, the rest timber.

"French forests chiefly produce timber of small dimensions suitable for mining timber, props, firewood, etc., even in excess of

the needs of France."[4] Unfortunately, there is little export market for this class of wood, of which France has a surplus. France's deficiency in sawn timber is met by imports, the larger portion, about one-half, coming from the Baltic States. Sweden alone furnishes one-fifth of France's total imports. Other important sources are Germany, Central Europe, Luxembourg and Belgium, Roumania, and United States.

Fish. The nation must be counted fortunate which has access to important fishing grounds, for the fishing industry is an important source of cheap food and a training school for those who are to man the naval and merchant ships of the nation. The extensive coastline of France gives ready access to the world's most important fishing grounds. French fishing boats fish not only in the Mediterranean Sea, Bay of Biscay, and North Sea, but go even to the fisheries of Iceland and the Grand Banks. Indeed, the French are credited with having been the first, early in the sixteenth century, to visit these famous cod fishing grounds.

Boulogne is the largest fishing port and supplies about two-thirds of France. The famous French sardine fisheries are on the Mediterranean and Biscay coasts. Beauclaire on the Rhone and Bordeaux and Lemans on the Biscay Coast are very important centers for the canning of this fish. This industry is particularly important to Brittany. The traveler who visits the quaint port of Concarneau at the time of the Festival of the Blue Fishnets catches a glimpse of the importance of this industry in the lives of the people. When the sardine fisheries fail Brittany, thousands are on the verge of starvation. The south coast of Brittany and along the Biscay coast are the oyster fisheries. Here France has developed artificial oyster breeding with notable success.

Agriculture

France, like most of the developed areas of the world, is primarily an agricultural country. Over 40 per cent of the population is engaged in agricultural pursuits, tho only about 16 per cent is engaged in working the land. Tho general statistics do not place France in the same class as Belgium, Holland and Germany as to production per acre, it must be remembered that France has less population per acre of cultivated land, and a wide diversity of soils and crops. The size of the farms of France indicate the in-

[4] Ariel H. Oxholm, The French Lumber Market. U. S. Department of Commerce, Trade Promotion Series, No. 19

fluence of soil on production. A farmer can live in reasonable comfort on a couple of well-watered acres near Avignon, but in the "melancholy Sologne" 125 acres is a small holding.

Size of Holdings

2,088,000	under	2½ acres
2,524,000	from	2½ to 25 acres
746,000	from	25 to 100 acres
118,000	from	100 to 250 acres
29,000	over	250 acres[5]

Nevertheless, France, unlike most of the neighboring countries, is practically agriculturally independent as regards foodstuffs. The diversity of the agricultural areas gives to France not only this independence but a widely varied supply of foods.

Cereal production is the most important part of the French farm system, over one-third of the cultivated area being devoted to it. Wherever possible, wheat is the cereal produced, with the result that France ranks fourth in the world production of wheat. Nevertheless, even with the aid of the important wheat resources of Algeria, France does not usually produce sufficient wheat for home consumption. The pre war per capita consumption of wheat in France was 9.12 bushels, the highest in the world, Belgium came second with 8.53 bushels; United States fifth with 5.68 bushels. This order has not been changed, tho since the war the consumption in all European countries is less. The traveler in France soon becomes accustomed to the common sight of old and young lunching on a thick slab of crusty bread.

As important to the Frenchman as his bread is his thin, sour wine. So grape production is second in importance to cereal production. The most important wine producing section is the great vineyard district of the Mediterranean alluvial soil region. It is quantity production of cheap wines that makes this the most important area. The Bordeaux district, Burgundy and the escarpments of Champagne produce the varied brands which have made France famous.

Stock raising, particularly cattle, is an important part of the agricultural system of France. As in the United States, the regions of poor soils or adverse climate conditions are largely the breeding areas, while in the richer soil areas the cattle are fattened. Most meat production in France is more closely allied with the

[5] J. H. Clapham, Economic Development of France and Germany, 1815-1914

dairy industry than in the United States. Each section of France seems to have an admirable brand of cheese, and a visit to the Paris markets is bewildering because of the many varieties displayed. The veal of France, a by-product of the dairy industry is especially prized by neighboring countries.

France has lost the one time independence as regards fibers. The change to cotton is largely responsible, tho the increased cattle production has been a factor in limiting sheep raising and therefore wool production. Flax production has been reduced by the increase in prosperity of the landed peasantry, and the migration of rural labor to the cities.

The silk industry of France was never entirely supplied by home production. A serious disease among the silk worms gave a set-back to the production of raw silk from which France never recovered. The continued growth of the silk manufacturing industry is another factor in making it necessary for France to import over 80 per cent of the raw silk used in manufacturing.

Most of France's agricultural products are consumed at home. A limited supply of early vegetables from Brittany are sent to England and Belgium. Certain makes of cheese, as the famous Roquefort, from the Causses, and Camembert from Normandy have an extensive market.

Manufacturing

Manufacturing in France is for the most part centered in the north and east. Altho France is in the first rank as a manufacturing nation there is no highly industrialized area comparable with that of England, Germany or the United States. The region of the North of which Lille is the center, altho precariously located, is the industrial heart-land of France. The location of this area is the result of natural resources for here are rich deposits of both coal and iron, excellent transportation facilities, and an abundant labor supply. A wide variety of materials are manufactured in this region of which textiles, linen, cotton, wool, and iron and steel are the most important. Other manufactures are clothing, wood products, leather, shoes, glass, porcelain, chemicals, sugar, rubber products, the lisle of Lille and lace of Valenciennes are examples of the widely known products of this region of the North. In the east is another important manufacturing region, Mulhouse in Lorraine is the center of France's most important cotton manufac-

turing area. The changed boundary line giving added wealth of iron, will no doubt, when the problem of fuel has been solved, make this region of France equal that of the North in importance.

A third manufacturing region, that of Lyon, has long been recognized as the world's most important silk center. Altho losing ground in quantity production because of the increased production in the United States and the Orient, it will without doubt continue indefinitely to lead in quality, richness, and variety of silk manu-

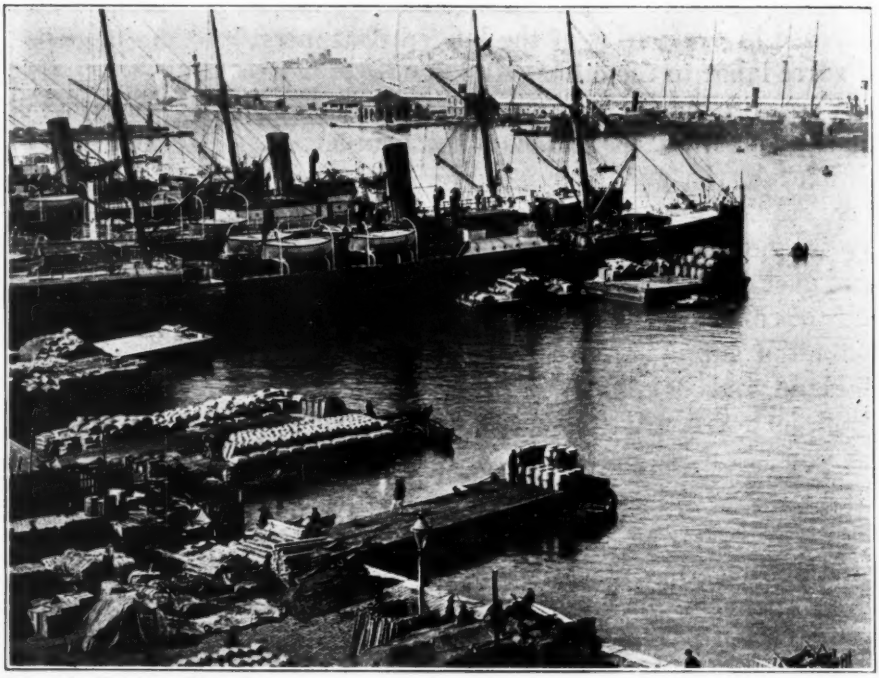

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Fig. 4. The Harbor of Marseilles

factured. Lyon is also important for its chemical industries. Le Creusot and Saint Étienne are two important manufacturing centers in this region. In Le Creusot are the largest steel works in France. Saint Étienne, altho a steel manufacturing city, is better known as the world's most important ribbon center.

Has any other section of the world a manufacturing region similar to the Paris region? In this area, limited to the city and its suburbs, are employed more people than in the highly industrialized region of the North. The products are amazingly varied and of the very highest value for they are the product of highly skilled,

intelligent, artistic labor. A brief list will indicate the uniqueness of this area: clothes, hats, automobiles, wrought iron-work, preserves and canned goods, confectionery, pocket books, jewelry, feathers, flowers, and furniture.

A list of important manufactures of France might be compiled which would lead to a study of most of France. For instance add porcelain at Sévres and Limoges, gloves at Grenoble, chemicals, in which France ranks third, in the Alps; clocks, and watches in the Jura and Savoie, soap at Marseille to those mentioned elsewhere in this article—and most of France is included.

Cities

If, as the French love to say, all roads lead to Paris; why not teach all of France from this fascinating center? The composite Parisian is the typical Frenchman, and in Paris is to be found not only the best that each department of France has to offer in every line but in the work shops the best that industrial France can produce. Paris is a great commercial center, a great financial center, a great industrial center, a great art center, and a great intellectual center. All of France and much of the world has made this so and no other city can claim so complete an existence—not even New York and London, its larger rivals.

In France are five cities of more than two hundred thousand population according to the 1921 census.[6]

Paris	2,906,472
Marseille	586,341
Lyon	561,592
Bordeaux	267,409
Lille	206,952

It would be an interesting exercise to divide France into five districts, each with one of these important cities as its center.

Transportation

Transportation facilities of France include 7460 miles of water ways, rivers and canals; 25,766 miles of railways; 24,566 miles of national roads; and a merchant marine for coast-wise and international commerce of about 4,000,000 tons.[7] All productive areas are easily accessible and with the growing importance of motor traffic, especially the motor bus, hard surface roads are being extended into even remote districts. Such regions as Brittany, the

[6] Statesman's Year Book, 1924
[7] Statesman's Year Book, 1923

Pyrenees, and the Alps are being opened up for tourists who prefer motor travel and incidentally the people in these districts are being benefited.

France, in spite of many handicaps as seasonal floods on the Loire, irregular terraine as in the Argonne, steep grades and frequent washouts as in the Pyrenees, blowing sands as on the Biscay coast, and lack of natural harbors, has one of the best developed transportation organizations of the modern world.

FOREIGN TRADE

The leading imports and exports of France in order of their importance are as follows:[8]

Imports	Exports
Cotton	Clothing
Coking Coal	Textiles, Silk
Cereals	Textiles, Cotton
Raw Silk	Pearls
Oilseeds	Automobiles
Coffee	Iron and Steel
Petroleum	Wines
Wool	Rubber Goods

These two lists of commodities give rise to two wholly different pictures, one is of small groups toiling with greatest care, skill and artistry; the other is of wide fields where many labor or great machines are busy. The most important part of the foreign trade of France is with other European countries.[9] The United Kingdom and Belgium take more than one-third of the French exports. The United States ordinarily leads the list of countries from which France imports, and is third in the export list. The commodities given above present an unusual and interesting way of studying France. Resources, agriculture, characteristics of the French people are among the factors called up by such a study. Marseille the world's greatest vegetable oil center, Lyon the world's greatest trade center in raw silk would also be included in such a study.

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THE BUSINESS OF FUR HUNTING IN CANADA AS AN EXAMPLE OF AN EXTRACTIVE INDUSTRY

JOHN Q. ADAMS
University of Missouri

The extractive industries are those in which it is the business of man to extract, or to obtain from nature various commodities, of animal, vegetable, or mineral origin, which are created independent of his own efforts and are taken with little or no thought of renewal or restitution. They are sometimes called the "robber industries" or "industries in which man robs nature." The extractive industries may be classified as follows: (1) industries based upon the exploitation of rocks and minerals, as quarrying and mining; (2) industries based upon the exploitation of natural vegetation, for example, lumbering; and (3) industries based upon the exploitation of wild animal life, such as commercial fishing or the hunting of fur bearing animals. The business of fur hunting in the wooded areas of Canada is an example of an extractive industry based upon the exploitation of wild animal life.

LOCATION AND EXTENT OF THE FUR PRODUCING AREA

Altho some furs are obtained from the treeless tundra area north of the wooded parts of Canada, these furs are fewer in number and less in total value than those taken in the forested regions. Hence, this discussion deals with fur hunting in the great forested area of Canada extending east-west from the Atlantic to the Pacific, and north-south approximately from the fiftieth to the sixtieth parallel. The only outstanding deviations from the north and south boundaries are, (1) in the prairie provinces in western Canada where the forest is replaced by grass up to about the fifty-fifth parallel, and (2) directly north of this area where the forest belt projects northward down the valley of the Mackenzie River almost to the seventy-fifth parallel.

CONDITIONS WHICH FAVOR THE BUSINESS OF FUR HUNTING

Certain conditions in this area favor the production of a large number of desirable pelts. The human population is sparse and probably will so remain. Agricultural activities are greatly re-

stricted as a result of (1) the long cold winters (eight to ten months) and short summers, conditions unfavorable to the growth of most of man's chief food crops, and (2) the heavy glaciation which has rendered the soil of a large part of this area unfit for agricultural use. It is probable also that most of the forests will never be cut. Most of the trees are too small to be used for lumber, and the transportation of even the small pulp wood "bolts" would be difficult because of the rapids in the streams and the many swamps and bogs. Hence, the woods and streams probably will long continue to provide excellent breeding grounds for many beaver, mink, muskrat, weasel, fox, and other fur bearers. The high quality of the pelts obtained here is a result of the long cold winters, because the colder the weather, the longer and thicker the fur coat must be to protect the animal.

The actual business of fur hunting is favored by the continued cold weather which keeps the pelts in prime condition thruout a long period each year; and by the numerous streams, lakes, and marshes that furnish highways by means of which the fur hunter may reach every part of the otherwise almost impenetrable forest.

METHODS OF FUR HUNTING

When possible animals are caught in snares or traps to avoid damaging the valuable pelts. Modern spring "steel" traps are used almost exclusively. In a few instances pits, pens, or "suspended log" traps are used to catch some of the larger fur bearers, such as the bear. Because of this use of traps the business is commonly called fur trapping.

In order to get the best quality of fur, trapping or fur hunting is carried on during the cold season. During the winter time the hunters or trappers, most of whom are Indians and half breeds, scatter out along the streams, some of them going hundreds of miles from the nearest settlement. The hunters confine their activities chiefly to the stream areas, because a great many of the more desirable fur bearers (beaver, otter, and muskrat) live along the streams; further, the streams are the highways, even in winter, at which time their level frozen surfaces form ready-made "hard roads." The hunters must go far from the permanent settlements because: (1) constant hunting has either greatly depleted, or exhausted, the supply of animals near the permanent habitations, and (2) the great demand, and consequent high prices offered for furs

has made it profitable to obtain them even from the farthest ranges of the fur bearers.

In the spring after the ice has melted from the streams, the hunters take their winter's catch down stream to the trading post. The means of transportation is either the well known birch bark canoe or some larger boat. A great many of these fur trading posts in Canada are maintained by the Hudson's Bay Company which was organized for this purpose in 1670. These posts are located at strategic trade centers such as the meeting place of two streams, or along the lower course of some large stream. An example of this latter type of location is York Factory, near the mouth of the Nelson River on Hudson Bay.

A summary of the kinds, number and total value of the more important varieties of pelts taken within this region in 1922 is given in the following table from the "Canada Year Book, 1924."

Kinds (Year 1922)	Number of Pelts	Total Value of Pelts
Muskrat	3,846,161	$ 5,077,886
Fox, white	77,135	3,015,348
Beaver	175,275	2,461,667
Mink	159,626	1,371,411
Marten or sable	45,579	1,045,810
Fox, silver	6,865	774,348
Fox, red	42,739	564,998
Fox, cross	9,121	397,829
Coyote	32,998	353,807
Lynx	17,317	332,061
Fisher or pekan	3,976	277,667
Otter	10,676	259,568
Skunk	117,840	236,081
Ermine (weasel)	362,236	219,306
Wolf	7,839	124,344
Total	4,915,383	$16,512,131

Major Markets for North American Furs

Furs are one of the few important commodities which must be examined personally by the buyer. As no two pelts are alike, it is obvious that furs cannot be bought to "match sample." This fact has given rise to a few great world fur markets where furs are collected and buyers and sellers get together and examine the goods in detail. The leading raw fur markets of North America are: St. Louis, Missouri; and Montreal, Canada. The importance of St. Louis as a fur market is due primarily to its historical geography.

Its location, near the mouth of the Missouri river, and advantages of an early start made it the center of the western fur trade in the heyday of the John Jacob Astor Company, and the Rocky Mountain fur trade (1805-25). Since this time St. Louis has retained an interest in the fur trade, and, when the World War interfered with the great European markets at Leipzig, Nizhni-Novgorod, and London, St. Louis became a world market. Montreal was the first real center of the North American fur trade, assuming this position early in the seventeenth century. The chief reason here, as at St. Louis, was the ideal location of Montreal for river trade. Fur hunters from Montreal went by canoe: (1) up the St. Lawrence and thence into the lower Great Lakes; (2) west to Georgian Bay and the upper lakes by means of the Ottawa River depression; and (3) south to the Iroquois country in central New York by means of the Richelieu River, Lake Champlain, and the Mohawk depression. Montreal, like St. Louis, took advantage of the war depression of the European fur trade centers to establish a fur market on a large scale. The first large auction sales were held in Montreal in 1920 when 949,565 pelts, valued at $5,057,114.00 were sold. Minor North American fur markets are Winnipeg and Edmonton, Canada.

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MAPS WITHOUT CULTURE: A NEW AID IN THE TEACHING OF PHYSIOGRAPHY

DOROTHY WYCKOFF
Bryn Mawr College

Every teacher of physiography or of elementary geology is familiar with the possibilities of the topographic maps published by the United States Geological Survey. The large scale of these quadrangles, the detail with which they show topography, drainage, and culture have made them valuable not only on field trips, but likewise in the laboratory, where the study and interpretation of maps may familiarize the student with physiographic features which are not available for field study, or may make clear processes which are not always distinctly visible in the field.

Fewer teachers, however, seem to know of the experiment which the Survey has recently made, in publishing these same quadrangles printed in blue and brown only, with the culture omitted. The name is written on each in pencil, but for many purposes it is advisable to erase even this identifying mark. These sheets are proving, in some ways, even more valuable for laboratory instruction than the maps on which the culture is given.

On these newer maps, the student sees the topography of the country unobscured by culture. A comparison of two quadrangles —for example that of Boston and vicinity—one with, the other without, culture, will show that this is a decided advantage in the case of thickly settled regions. Of course this obscuration, especially where the map shows a more sparsely populated district, may be more apparent than real to the eye of the trained physiographer, but it is a very real difficulty in the way of the untrained student. In this age of motor travel, the only type of map with which the average person is acquainted is the road map: roads, towns, names—these are the landmarks by which he steers. It is only natural then that the student, confronted for the first time with a topographic map, focusses his attention on the familiar elements of it: roads, houses, printed names—the very fact that these are printed in black emphasizes them. But if the map shows no culture, the actual forms of the topography begin to have meaning for him.

The completeness with which this habit of depending on *names* dominates the geographic thinking of students may readily be

tested by any teacher who will show his class one of these quadrangles (without culture) representing some familiar area. Many, if not most, of the students will probably fail to recognize the environs of their own home towns.

Names serve, too, as a mere mnemonic device, sometimes replacing actual observation and reasoning. It is one thing for a student possessed of a good memory to recite glibly what he has been taught about a certain place when he recognizes its name on the map; it is often quite another thing to work out the physiographic history of the same region when he does not know its name. The task then becomes one, not of rote memory, but of actual application of criteria, exercise of critical judgment, and logical thought. Thus the value of these maps in quizzes and examinations is immense, and they are not less valuable for students to use in solving laboratory problems and the preparation of reports.

As students become more familiar with map work, the very fact that it is not always possible to decide immediately the origin of certain features, without knowing the location of the area in question, becomes in itself a valuable lesson. It is well to learn the limitations of one's instrument. The discovery, for instance, that sink-hole topography, sand-dune topography, and some types of glacial topography closely resemble each other and cannot readily be distinguished on the evidence of the map alone, gives new interest in the learning of facts relating to climatic conditions in different parts of the country, to underlying rock structure, to the extent of the continental ice sheet. Advanced students in physiography may find it good practice to take a large number of maps and try to classify them according to physiographic provinces.

The absence of culture leaves the map clear for various other uses. The study of the forms of plateaus, mesas and buttes, of terraces, or of remnants of peneplains may be made more vivid by coloring areas above a certain level. Exercises in geography may be devised—locating sites for towns, routes for roads and railroads, etc.; the relation which the culture bears to the topography is thus emphasized as it never could be by merely looking at maps on which these things were already printed. Many other ways of using these sheets will doubtless occur to the ingenious teacher.

Below are listed, under the subjects which they illustrate, a limited number of quadrangles selected as examples from the longer list of maps without culture now available. The name of the state is given first followed by the name of quadrangle.

Unfortunately many of these quadrangles have been printed only in very small editions, but it is to be hoped that, if once their value is appreciated and the demand for them grows accordingly, the Survey will eventually be able to supply them in quantity for all regions which have been mapped.

Wind Work

Delaware, Rehoboth
Kansas, Larned
Washington, Moses Lake

Ground Water

Kentucky, Bowling Green, and Lockport
West Virginia, White Sulphur Springs

Stream Erosion

Group I. Youth
Colorado, Mesa de Maya
Illinois, Highwood
North Dakota, Fargo

Group II. Maturity
California, Lanes Bridge
Kentucky, Salyersville
New York, Jamestown

Group III. Old Age
Indiana, Princeton (Ind.-Ill.)
Kansas, Caldwell
Mississippi, Vicksburg (Miss.-La.)

Rejuvenation

Group I. Previous cycles of erosion shown by terraced valleys, intrenched meanders, remnants of peneplains
Kentucky, Brownsville; Pennsylvania, Lancaster; West Virginia, Beckley

Group II. Showing adjustment of drainage to structure, and effects of unequal hardness of underlying rocks
Maryland, Pawpaw (Md.-W.Va.-Pa.); Pennsylvania, Delaware Water Gap (Pa.-N.J.), Harrisburg
Additional maps showing stream adjustment and effects of unequal hardness: Arizona, Marsh Pass; Kentucky, Lockport; New York, Kaaterskill

Group III. Youth superimposed on maturity
Maine, Kezar Falls (Me-N.H.); New Hampshire, Monadnock; New York, Ausable

Alluviation

California, Pasadena
Illinois, Jonesboro
Louisiana, Fort Livingston

Glaciation

Group I. Alpine
California, Mt. Shasta, Yosemite
Colorado, Georgetown

Group II. Continental
Illinois, Barrington
Maine, Passadumkeag
Michigan, Schoolcraft
New York, Sag Harbor
Wisconsin, Sun Prairie

Shore Lines

Group I. Dominantly emergent
Florida, Mayport; Ohio, Euclid; Virginia, Norfolk (Va.-N.C.) (The Norfolk map shows also slight submergence.)

Group II. Dominantly submergent
Maine, Vinalhaven; Oregon, Coos Bay; Rhode Island, Narragansett Bay

Group III. Showing strong evidence of both emergence and submergence
California, Redondo; Delaware, Rehoboth; Virginia, Williamsburg

Group IV. Neutral
Louisiana, Fort Livingston; Massachusetts, Barnstable; New York, Sodus Bay

Lake Basins

Florida, Arredondo
Illinois, New Haven
Michigan, Pontiac
New York, Sag Harbor, Skaneateles
Oregon, Crater Lake National Park, and Silteoos Lake

Volcanism

California, Mt. Shasta
Colorado, Spanish Peaks
Oregon, Crater Lake National Park

A NORMAL SCHOOL PROJECT

GEORGE F. HOWE

State Normal School, New Britain, Connecticut

Before a thing is learned a reaction must take place in the pupil's mind and one way to stimulate the reaction is thru solving difficulties which arise in the working out of a project. To get the maximum out of a project, however, it must be undertaken in the right attitude whether that attitude is inspired by the teacher or by the pupil. In order that the prospective teacher may see some of the difficulties to be encountered in the project lesson she should undertake the working thru of a project. A great deal is written about projects in the lower grades but the field has yet to be covered adequately in the Normal School, the place where the future grade-school teacher is taught.

In lower grade classes most of the work of the project must be closely supervised by the teacher. The higher the grade the more the work should be entrusted to the pupil, the teacher acting as councillor. The test of the Normal School project is the ability of the future teacher in working things out for herself and getting good results for the particular problem at hand.

STUDENTS SEE NEED OF EXPERIENCE

In a class in "Methods in Geography" the project plan has been discussed and the need of actual experience became apparent. Several articles were assigned and talked over and the class was unanimous in asking for a project on South America, the next continent to be studied. Reference was given to an article in the *Journal of Geography*[1] which dealt with a grade-school project on our sister continent. In this article were set forth the trials and tribulations of a group working out an "Exposition" and the success attending their efforts. It was thought by the Normal School students that the above plan could be changed to suit their own needs. It was decided that each individual was to be free to develop her own ideas in so far as they fitted into the general scheme of an "Exposition."

[1] *Journal of Geography*, An Avenue of Approach to the Study of South America. Maude E. Barber, September, 1925

Each country in South America was assigned to two students and committees were appointed to work out general details such as decoration, floor plans, reception, etc. The class decided to keep their work a secret from the rest of the school until the project was complete. It was doubtful whether over twenty young ladies could keep a secret from three hundred, but they did. To get the school interested a large poster was placed on the bulletin board with the southern end of South America as the tip end of a question mark. The latter was added to little by little each day. This happened before Thanksgiving and there were many conjectures that it was going to be a turkey. Thanksgiving passed and the conjectures changed to Santa Claus and a Christmas party. Thus the school was interested and that served as an incentive to the geography class. They must now show a well rounded project and be able to explain all about South America.

Content as Well as Method

In a course in methods content cannot be separated from method and other things being equal the more content received the better fitted for her task the teacher will be. Besides carrying on their class work, which was not interrupted during the carrying on of the project, the members were busy reading all available books, writing for materials and helping one another. The last factor is an important one in working out a group project for it is only thru seeing what his neighbor is doing, and helping, that the individual receives full benefit from the whole rather than a detailed knowledge of a part.

Outstanding Features

Of course products of all countries were shown. Several novel schemes were introduced, however, to give vivid pictures of existing conditions in various countries. In Peru there was a miniature train climbing over a mountain pass by means of a number of switchbacks. There was also an old village built at the foot of a hill on top of which was an Inca temple decorated with gold (white soap for the main temple with yellow soap for the decorations.) Colombia's exhibit was partly in a sink so that the water could be turned on to run over a waterfall to show the potential waterpower of that country. There was a sand relief of Chile with the desert at the north and a cross section of the desert to show how the

nitrate is obtained. The market place of Caracas was shown with representative products in small burlap bags. Several burros had just arrived from the country with packs strapped on their sides. A large ranch and meat products told of Uruguay's important industry. In Argentina was a corral full of sheep waiting to be taken to market on the railway car standing close by. French Guiana was a penal colony and British Guiana a large banana plantation. These are only a few of the many things portrayed in each country.

In one corner of the room laurel represented the green of the jungle. Under the trees was a hut with walls of clay, hay for a thatched roof and a brown baby doll sitting in the doorway. In order to make the scene appear natural someone suggested having a few animals in the jungle. Two students went to a large department store and asked to borrow toy animals for that purpose. They reported that they had been successful and had asked the clerk to send a monkey and an elephant. They were rather crestfallen in admitting the latter for they had later found out that the elephant was not a native of the Amazon jungle. That lesson had been driven home in a way that will make a lasting impression.

SCHOOL INVITED TO VIEW RESULTS

The morning of the opening of the Exposition a play was given during assembly period.[2] That was the final bit of advertising and the school turned to the "Exposition" room where on all sides were heard words of exclamation and praise.

The results to the class were many. They learned to judge the important factors of a country and to set aside the unimportant with brief mention. They learned where to look for and where to obtain material. South America took on a new aspect; they enjoyed studying it and will enjoy teaching it. Best of all, perhaps, to show the practical nature of the project, that class has gone into the training school and some of the students are working out very fine projects with the children. Method courses in the Normal School should be practical, not all theory, and the project is something every teacher should know how to carry out.

[2] A modification of the play outlined in "Teaching Geography by Problems." E. E. Smith, p. 288. Doubleday Page and Co., Garden City, N. Y.

AGRICULTURAL GEOGRAPHY

F. A. CARLSON
Ohio State University

One of the valuable results from the recent development of geography has been the specialization in agricultural geography. Agriculture has always been an essential phase of industrial or economic geography, but it is encouraging to note the increased interest in this basic industry.

Possibly the earliest exponent of agricultural geography is President Butterfield of Michigan Agriculture College, formerly of Massachusetts Agriculture College, who has furthered this development thru his publications, lectures, and as a member of several national and inter-national organizations for the study of world agriculture. Professor J. Russell Smith of Columbia University has also contributed valuable information concerning this subject. Members of the United States Department of Agriculture have compiled valuable statistical information in regard to world agriculture particularly O. E. Baker and V. C. Finch, the latter at present Professor of Geography at the University of Wisconsin. This is by no means a complete list of the contributors to agricultural geography as there are many others who shared in the early development. Among the universities which were first to introduce the subject of agricultural geography are Wisconsin, Ohio State, and Clark.

In support of the present interest in agricultural geography we have greater emphasis placed on agriculture in recent economic and industrial textbooks and a greater number of agricultural topics appearing in geographic journals than formerly.

That geographers should give greater attention to agriculture is the most natural and expected trend of development as there are no means of illustrating the relation of natural environments to life that exceed those established in agriculture. The subject is not only of theoretical value for the illustration of geographical relations, but it also has a practical application. It offers an opportunity for information about the agricultural regions of the world, continents and countries: the staple food crops of domestic and foreign importance; the relations of climate, topography, soils,

and crops; and the relation of the industry as a whole to man. It presents the only composite agricultural information available in many institutions for students not in a college of agriculture. It should correct the erroneous impression often cherished by students and others that agriculture represents an inferior vocation. The standards of living of the rural people of the world, which are largely governed by agricultural conditions, are better understood by having a general knowledge of the geography of agriculture. The subject may serve as a means of bringing about a better relationship between the colleges of agriculture and non-agricultural colleges. There are many other advantages established thru the fundamentals of agricultural geography which are as obvious as those mentioned.

The increasing interest, however, in agricultural geography necessitates a more careful training in allied subjects on the part of the teachers of this subject whether presented as a phase of economic or industrial geography or as a specialized course in agricultural geography. It is fully as essential to be trained in agricultural subjects in teaching agricultural geography as it is to have a working knowledge of history to teach historical geography. The curriculum for the teachers of geography should include courses on the "Principles of Soils," "Farm Crops," and "General Botany." The fundamentals of these courses could be applied directly or indirectly in accounting in part for the growth and development of all indigenous and cultivated plants. They would also serve as a means of better understanding the distribution of the domestic animal life.

The foregoing statements represent the realization that the time has come when geographers must train for the specialization which the development in the field of geography has created.

EDITORIAL NOTES

What is geography? This seems to be an ever present question. Its distinctive feature, as understood by most geographers of the present day, is the description and explanation of the relation that exists between the natural environment and life. However, such a view is not shared by others, as evidenced by the first announcement issued by "The Society of Woman Geographers." This Society was organized in 1925 "by a group who felt that there should be some medium of contact between women distinguished in geographical work and its allied sciences,—ethnology, archaeology, botany, natural history, sociology, folk-lore, arts and crafts, etc., etc." The "etc." makes one wonder what other phase of human knowledge has been omitted. Eligibility for Active Membership is limited to those "who have done distinctive work whereby they have added to the world's store of knowledge concerning the countries in which they have traveled." That members of such a select group should find bonds of mutual interest is clear. Bulletin No. 1 lists thirty-nine members, together with a brief account of distinguished contributions that have been made by each. It is a list of accomplishments of which any organization might well be proud. Perusal of the list reveals art, psychology of primitive people, big game hunting, folk-lore, ornithology, biology, botany, zoology, sociology, history, archaeology anthropology, needlework, embroidery, and fiction to be among the special interests, or the specific fields of specialization of the members. One wonders if Bulletin No. 2 will contain the names of *a few geographers*, as it seems unlikely that such a distinguished group of people would apply the misnomer—"Geographers"—to their society. The use of such a misnomer should be condemned as it conveys the impression that "geography" is all inclusive. Geography, in the field of education, must defend itself constantly against such false impressions. However, it should be said, in fairness, that the Society of Woman Geographers is not the only organization that contributes to such impressions. Unfortunately these false impressions make it more and more difficult to convince school administrators that geography has a distinctive contribution to make in the field of education.

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New York is the peer of all our ports. Its improved water frontage stretches for nearly 1,000 miles around the piers of the islands and mainland. Approaches to certain piers are kept deep enough to accommodate our largest vessels. The port never freezes, and the tides and currents cause little trouble to shippers.

To this port come 12 railways and 154 steamship lines. These transportation agencies in 1923 handled 47.4 per cent of our total imports and 36.43 per cent of our total exports. If the port had been merely a gateway, the meeting of ship and rail would have been simplified. But the port is itself a market, having within its borders a population of more than 7 million. The consumption and production of this population makes transshipments of products necessary between the islands and the mainland. Since the greatest concentration of population is on Manhattan and Long Island, the greatest transshipment facilities are on these islands. That necessitates a water crossing for goods moving to or from the interior. This water crossing is effected by lighterage and car floatage, since only two railways have direct freight connections to the islands. How much this transshipment adds to the operating costs may be gleaned from the statement that it costs as much to take a freight car from the New Jersey yards, unload it at Manhattan or Brooklyn, and return it to the yards, as it does to take the car from Buffalo to New Jersey. This problem of transshipment is being carefully studied by the "Port of New York Authority" which is seeking to coordinate the port facilities. These notes are taken from Port Series No. 20: The Port of New York. (Government Printing Office, Washington.) A study of its excellent aerial photographs and maps would greatly clarify this brief article.

Our tropical importations are indispensable to our civilization. We buy annually more than a billion and a half dollars of tropical products. Those coming from tropical America come from an area two and a third times that of the United States, with a great diversity of climates, soils and vegetation. The outstanding need of developing tropical agriculture and forestry is research. Part of this research is being undertaken by the Tropical Plant Research Foundation, 1350 B St. S. W., Washington, D. C. This Foundation has just published an eight page pamphlet, "Notes on the Economic Status of Certain Cuban Homoptera," by Herbert Osborn. Mr. Osborn conducted an economic survey of cane sugar pests in Cuba, noting especially their distribution, their host plants, and the extent of their migration from these hosts to the cane.

Insect pests and disease producing fungi are factors in the natural environment which must be combatted to insure crop production. Students of tropical geography will find valuable information in the publications of this Foundation. A ten page pamphlet, "Botanical Problems of American Tropical Agriculture," by W. A. Orton, Director of the Foundation, is especially worthy of note.

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The National Geographic Society is continuing its publication of the *Geographic News Bulletin.* Thirty issues are published during the school year at the nominal fee of twenty-five cents. The Bulletins are available only to teachers.

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The Federal Oil Conservation Board recently reported that only a six year's supply of petroleum remains in the proven sands of this country. *News Service* of the Carnegie Institute of Technology announces that this report has created much interest in the International Conference on Bituminous Coal, at Carnegie Institute, Pittsburgh, Nov. 15-19, 1926. Among the distinguished scientists and fuel technologists from Europe who will attend this Conference are Bergius and Fischer of Germany, and Potart of France. These three men have succeeded in reducing coal to a liquid. This is the first time they have been brought together at a conference. Their talks are expected to give impetus to the research work of our oil and coal chemists. The aim of the Conference is centered in finding the best methods of utilizing our coal, and thus help solve the problem of our waning fuel oil supply.

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The Nebraska chapter of the National Council has just issued its first bulletin for the year. It is devoted to the interests of better geography teaching and E. E. Lackey of the University of Nebraska is the editor. Among the short, snappy articles that appear in this issue are, The Teaching of Location; How to Make a Blackboard Outline Map; Devices for Geography; State Abbreviations; and numerous News Notes. Let us hear from other State Councils.

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The requirements at Columbia University for advanced degrees in geography are set forth in one of their new bulletins. A candidate for one of these degrees may correlate his research in geography with certain courses in the fields of education, physiography, economics, history, public law, sociology, botany and zoology. The newly appointed committee on "Advanced Instruction and Degrees in Geography" functions as a department in supervising the work of the candidate in his chosen field.

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The inaugural meeting of the Madras Geographical Association was held at Madras, March 16, 1926. This organization is the first of its kind in India. Some of its objects are to promote geographical study, especially of South India, improve the teaching of geography, and work for the establishment of a school of geography. The Association has just published its first bulletin which reports the various addresses of the inaugural meeting, and contains a plea for a school of geography at the University of Madras.

ON TO PHILADELPHIA

The next annual meeting of the National Council of Geography Teachers will be held in Philadelphia, December 27-29, 1926.

Theme: Geography in the Curriculum

Since curriculum building is the primary interest of educators thruout the country, the question of the function and place of geography in the curriculum has been adopted as the theme for the coming annual meeting. For this reason, superintendents are most cordially invited to send representatives to these sessions.

The President will greatly appreciate the cooperation of educators who will bring to her attention the work of teachers and committees who are making contributions in the matter of geography teaching which should be presented at this meeting. The Council is especially interested in (1) units of work that are producing worthwhile results, (2) means of measuring the results, (3) methods of procedure in building courses of study in geography.''

Sectional Meetings. Some of these meetings will be conducted simultaneously, but at times two sections will be combined.

Section A. Geography in the Elementary Grades (1-6)

Section B. Geography in the Junior and Senior High Grades (7-12)

Section C. Geography in Teacher Training Institutions (Normal Schools, Teachers Colleges, Schools of Education)

Clinics will be conducted over a period of two days during which time the same group of pupils will be used in each section (A and B). Each demonstration lesson will be conducted with these pupils by an experienced teacher who will at the conclusion of the lesson analyze the techniques that have been used. Discussion will follow.

Roundtable Conferences will also constitute a part of the sectional meetings. The topics will deal with (1) the selection of geographical subject matter and the determination of essential outcomes of geography lessons in terms of geographic facts and principles and attitudes of mind; (2) guiding principles in choosing worthwhile geographic materials—specimens, pictures, maps, graphs, etc.; (3) analysis and discussion of units of work successfully developed with pupils.

General Sessions. These sessions will be held on Tuesday afternoon, on Wednesday and two evenings. (1) Reports of the respective Committees on Worthwhile Achievements in Elementary Grades and in Junior and Senior High Grades, (2) topics dealing with recent investigations in the general field of geography teaching and (3) the President's address—''Problems Demanding Immediate Attention''—will be presented and discussed.

One evening meeting will be devoted to a Geography Rally—dinner, an address or a ''Geographer's Recent World Tour,'' and a general social get-together occasion.

Special Features. An extensive display of essential materials for vitalizing geography lessons—primary grades to college—will be available for observation and study. Booklets, posters, sand table and other forms of expression work will be assembled and exhibited for observation and analysis.

Special excursions will be conducted for individual groups of teachers to museums, centers of economic geography and neighboring geographic regions (Atlantic seacoast, etc.). These trips can be conducted previous to or subsequent to the meeting.

ERNA GRASSMUCK,
State Department of Public Instruction,
Harrisburg, Pa.

GEOGRAPHICAL PUBLICATIONS

Douglas C. Ridgley. **Geographic Principles.** 190 pp. Houghton Mifflin Company, Chicago, Ill. 1925. $1.20.

For several years courses in the Principles of Human Geography have been announced in some of our college and normal school bulletins, and many have wondered just what a "Geographic Principle" was. According to one interpretation such a course would be similar to general courses in other sciences or in music, but it has remained for Dr. Ridgley to ferret out a list of real geographic principles and put them down for students and teachers to consider.

While this book is designed primarily for teachers, and its contents should be familiar to every live teacher of geography from the grades to the university, it is written in such simple, plain style that students even in the junior high school can grasp it.

Dr. Ridgley defines a principle of geography as "a fundamental truth concerning the relationship existing between man's activities and his natural environment." "A Geographic Principle is discernible only to the mental processes." He shows the difference between a "factor" and a "principle;" then he proceeds to deduce principles in several fields of geography.

More than half of the book is given over to principles in the study of North America. These chapters are just bristling with short pithy "principles" stating relationships as they may be found in the geography of North America. Some deal with climate, relief, or natural vegetation; others with agriculture; others with forests, forestry and minerals; another section works out a series of illustrative principles dealing with manufacturing industries. All these pages illustrate how a principle is discovered and set forth from a mass of geographic details, and principles can summarize and systematize in words a maze of geographic data much as a map synthesizes thousands of isolated facts. The chapter on North American cities appeared a year ago in this *Journal*.

Dr. Ridgley merits the thanks of all colleagues for this scholarly piece of work in a pioneer field.

Oberlin College GEORGE D. HUBBARD

H. M. Hoar. **Potash.** Significance of Foreign Control and Economic Need of Domestic Development. Trade Promotion Series No. 33. 92 pp. U. S. Dept. of Commerce, Washington, D. C. 1926. 15 cents.

This pamphlet gives a general survey of the world potash situation, with maps showing the chief producing areas of Germany and France. Prior to the war, Germany dominated the potash industry of the world. This was due to the accessibility of the Stassfurt deposits, the greatest producing areas in the world. When Germany lost Alsace to France, France began putting Alsatian potash on the market. This competition brought losses to both countries. Finally, they agreed on a cooperative marketing of their potash. So in 1924, and particularly in 1925, they divided the world markets between them. This agreement affects the United States, which is almost wholly dependent on these countries for its potash. Our possibilities of becoming independent of such price fixing monopolies are set forth in the Survey.

Frank Hurley. **Argonauts of the South.** 290 pp., 75 illustrations and maps. G. P. Putnam's Sons, The Knickerbocker Press, N. Y. 1925.

This narrative of the Australasian Antartic Expedition under Sir Douglas Mawson and of the Shackleton Antartic Expedition in the *Endurance* is beautifully illustrated with photographs by Captain Frank Hurley, the official photographer of both expeditions. The adventures of these two exploring parties covering a period of five years and the description of the regions are presented in an easy flowing style. Only a few scientific data on temperatures and wind velocities are included.

The artistry of the author is repeatedly revealing itself in beautiful descriptions. Thus the aurora drapes the heavens "with diaphanous folds of gently swaying pale green gossamer" flushed with rose or violet and ending in shoots of flame. And the ship in the berg-infested sea passes down "avenues of marble skyscrapers." Even after the ship is icebound, the author sees not a frozen lead in the ice floe but a "vast field of white carnations" which at sundown are "flooded with a thousand rosy tints."

But the blizzard gives another picture. It is a veritable sandblast, bombarding the eyeballs unless protected by goggles. Walking is impossible. One's sleeping bag becomes the only safe retreat. And then comes the calm, when "ears ache dully after the continuous din."

No people were encountered on these trips except the whalers at South Georgia who served the party sausages made from whale-fed pigs! Most of the area traversed had never been visited by man. Only a few huts on Macquarie Island gave evidence of past habitation. These were the huts of those engaged in the penguin oil industry before the island became a bird sanctuary.

The crushing of the ship, the death of two of the men, the camps on floating ice cakes until leads drove them into the small life boats, the encampment on Elephant Island and their rescue therefrom—these are a few of the grim experiences which the author relates without dwelling needlessly on harrowing details.

The book is well worth a place on your reading list.

State Teachers College,
Mankato, Minn.
CORA P. SLETTEN

M. J. Meehan. **Caribbean Markets for American Goods.** VI. Porto Rico. Trade Information Bulletin No. 402. 25 pp. 1926. 10 cents.

This is the last of a series of bulletins on Caribbean Markets. Porto Rico is our fifth largest market in Latin America. The present bulletin discusses the island's bases of prosperity, and gives detailed statistics of its purchases from the United States. One section relates the time of the various crop harvests. These pamphlets may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Emmett A. Chapman. **Australia.** A Survey of its Resources and Foreign Trade. Trade Information Bulletin No. 390. 34 pp. 1926. 10 cents.

Itemized data on Australian exports and imports for 1923-25 is probably the feature of this bulletin most useful to geography teachers. It may be of interest to note that during 1924-25 exports from the United States were almost double those of the five-year period preceding 1913.

Olive Price. **The Middle Country.** 176 pp., 2 uncolored maps and several illustrations. World Book Co., Yonkers-on-Hudson, 1926. Walter Pitkin and Harold Hughes. **Seeing America, Book II, Mill and Factory.** 333 pp., many maps, graphs and pictures. The Macmillan Co., New York, 1926. William Morse Cole. **Economic Success.** 391 pp., 27 illustrations. The Macmillan Co., New York, 1926.

Many of our geographic books for children are being written in the form of travels. As the characters journey from place to place, they describe what they see. Such books have the personal touch, and they are valuable to use along with the textbook in obtaining a deeper knowledge of geography.

"The Middle Country" is a small book which describes the adventures of a Chinese boy in his native land. The story is woven around a poor boy who is adopted by a rich cousin; and who, in the course of events, travels considerably. The life of the Chinese is vividly described in simple language for young children.

"Mill and Factory," of the series Seeing America, is very well written. Two young boys travel over America visiting many industrial establishments. The exciting times which they have, as well as the descriptions of what they see will hold the interest of almost any young person in the middle or upper grades.

"Economic Success" may be used as a textbook in teaching young children in the upper grades the principles of economics. The meaning of success and how to obtain it are discussed. Such topics as land, capital, labor, rent, interest, wages, profit and money are treated in an elementary way. Socialism, communism, anarchism, single tax, unions, cooperation, profit sharing, shareholding and industrial democracy are described. A study of this book will help young pupils see how success is obtained and it will help them think along the right lines.

Chicago Normal College FREDERICK K. BRANOM

S. J. Shand. **Useful Aspects of Geology.** D. Van Nostrand Co., New York. $2.50.

This little book of less than 200 pages was written to serve "the large class of people who have never picked up any systematic knowledge of geology . . . ." The first chapter on "First Observations" appears to meet the requirements, but the scientific language used in other chapters makes the book of doubtful value to the non-technical reader. The earlier chapters are essays on such subjects as Geological Age, Geological Structure and The Composition of Eruptive Rocks. The chapter on weathering begins on page 83, more than a third of the way thru the text. This process is usually treated early, because it is an easily observed phenomenon and makes an admirable introduction to geology. The useful applications of geology are treated in the later chapters. The book will probably be most useful to those students who have had some training in the technical sciences as a background for understanding the fundamental conceptions in geology. The many good illustrations contribute much to the usefulness of the book.

University of Wisconsin GUY-HAROLD SMITH